

Remarks

The Applicant acknowledges the allowance of claim 14. The Applicant has added new claims 17 and 18 that depend from claim 14. The Applicant respectfully requests these claims to be examined and found allowable. The Applicant has also added new claims 19-21 drawn to the gate-style reader. The Applicant respectfully requests these claims to be examined and found allowable.

The Examiner rejected claims 1-3, 5-7, 12, 13, 15 & 16 as being anticipated by Haaf. In addition, the Examiner rejected claims 4 and 5 as being obvious in view of Haaf. The Applicant respectfully traverses the rejection. Independent claims 1, 12, and 15 each require the sensor to detect airborne molecules generated when the tire material of the pneumatic tire is overheated. The overheated tire condition recited in the claims is different from the burning tire condition described in the Haaf reference. A tire material that has reached a burning condition cannot be salvaged by stopping the burning condition. To the contrary, an overheated tire material can be salvaged by removing the tire from service and allowing the tire material to cool. For example, a haul truck having an overheated tire may be stopped to allow the tire material to cool. The tire pressure may be adjusted and the tire may be placed back into service. The present invention is provided in order to save tires from being ruined. This is especially important on off-the-road tires that can each cost over \$20,000.00. The device disclosed in Haaf is designed only to save the vehicle from catching fire by warning the operator that a tire has caught fire as described in the third full paragraph on page 2 and the fourth full paragraph of page 6 of the Haaf

translation. The Haaf device is a safety device for the vehicle's occupants instead of a safety device for the tire. The Haaf device does not function until the tire is lost to combustion. Haaf thus does not disclose or suggest a sensor that creates a warning signal in response to an overheated tire condition. In order to clarify the difference between the claimed overheated condition and the burning tire condition of the Haaf reference, the Applicant has amended independent claims 1 and 15 to recite that the sensor detects airborne molecules generated when the tire material of the pneumatic tire is overheated before the tire material combusts. The Applicant thus submits claims 1, 12, 15, and their dependent claims, are patentable over Haaf.

With respect to claims 4 and 5, the Applicant submits nothing in Haaf suggests the use of a hand held sensor. The Haaf device warns the truck driver of a burning tire condition. There is no reason to use a hand held sensor to detect whether or not a tire is burning. Anyone viewing the tire could immediately determine if the tire was burning. Furthermore, the Haaf device is intended to be used while the vehicle is in use on the road where the use of a hand held reader is impossible. The Applicant thus submits that the claims drawn to the hand-held reader are patentable over the Haaf reference.

The Examiner rejected claims 10 and 11 as being anticipated by Metzger. The Applicant respectfully traverses the rejection. Claim 10 requires the sensor to be configured to detect airborne molecules generated when the tire material of the pneumatic tire is overheated. The sensor disclosed in the Metzger reference is one of the many known tire sensors that detect temperature and pressure.

These sensors are sensing the state of a gas not the composition of the gas. Nothing in Metzger discloses or suggests the use of a sensor that analyzes the type of molecule in the gas. The Metzger device only will create a warning signal once the temperature of the gas exceeds a predetermined level. The disadvantage with this type of sensor is discussed on pages 1-4 Applicant's specification. Sensors such as those disclosed in Metzger will not create a warning signal at the beginning of an overheated tire situation because the overheated tire event must occur for an extended time until the gas inside the tire warms to a level to trigger the alarm. The Applicant thus submits the invention recited in claims 10 and 11 is patentable over the Metzger reference.

The Examiner rejected claims 8 and 9 as being obvious in view of Haaf in combination with Metzger. The Examiner contends that Haaf discloses the claimed invention except for the sensor being exposed to the inner chamber of the tire. The Examiner contends that one of ordinary skill in the art would place the Haaf sensor into the inner chamber of the tire as taught by Metzger. The Applicant respectfully disagrees. One of ordinary skill in the art would not be lead by any reference to place the Haaf tire burning sensor inside a pneumatic tire. As explained above, the Haaf device creates a warning sign when a tire is on fire or in combustion. Haaf teaches that combustion sensors are located outside of the tires to monitor external signs of combustion. Metzger teaches internal monitoring of temperature and pressure. Such monitors and monitoring locations are ill-suited for monitoring tire combustion. A monitor disposed on or in a tire could be destroyed by the combustion event that it is intended to monitor.

Further, a combustion event is most likely to appear through the external surfaces of the tire where an internal monitoring device would not readily detect the event. The Applicant thus submits there is no suggestion or motivation found in the combination of references that would lead one of ordinary skill in the art to make the combination presented by the Examiner. Further, the combination does not disclose or suggest the use of a monitor configured to detect an overheated tire condition that occurs well before the combustion condition described in Haaf.

In view of the foregoing, the Applicant respectfully requests reconsideration of the claims and most earnestly solicits the issuance of a formal Notice of Allowance for the claims.

Please call the undersigned attorney if any issues remain after this amendment.

A handwritten signature in black ink, appearing to read 'F. H. Zollinger III', written over a horizontal line.

Fred H. Zollinger III

Registration No. 39,438

Zollinger & Burleson Ltd.

P.O. Box 2368

North Canton, OH 44720

Phone: 330-526-0104

Fax: 1-866-311-9964